

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for rectificatively separating fluids comprising (meth)acrylic monomers in a rectification column by directly cooling the vapor comprising:

forming a top condensate including (meth)acrylic monomers by allowing the (meth)acrylic monomers ~~rising~~ to rise to the top of the rectification column ~~to form top condensate comprising (meth)acrylic monomers;~~

separating a condensation space at the top of the column ~~being separated~~ from the region of the rectification column containing a separating internals only by at least one chimney tray which has at least one chimney, from which the top condensate formed is removed from the rectification column, ~~the process comprising:~~

effecting the direct cooling of the vapor in the condensation space in at least two spray zones, which are spatially successive and are ~~flowed~~ flowed through by vapor, by spraying in each of the at least two spray zones supercooled top condensate ~~comprising~~ including added polymerization inhibitor through spray nozzles; and

lowering the a temperature of the sprayed supercooled top condensate ~~becoming~~ lower from spray zone to spray zone in the ~~flow~~ flow direction of the vapor.

Claim 2 (Currently Amended): A process as claimed in claim 1, wherein at least one of the at least two spray zones is supplied via annularly mounted spray nozzles.

Claim 3 (Previously Presented): A process as claimed in claim 1, wherein the spray nozzles are full cone spray nozzles whose opening angle is from 60° to 180°.

Claim 4 (Original): A process as claimed in claim 3, wherein the opening angle is from 90° to 120°.

Claim 5 (Previously Presented): A process as claimed in claim 3, wherein the spray cones overlap one and the same spray zone.

Claim 6 (Previously Presented): A process as claimed in claim 3, wherein the spray cones of spatially successive spray zones do not overlap.

Claim 7 (Previously Presented): A process as claimed in claim 3, wherein the spray cones of spatially successive spray zones just touch.

Claim 8 (Previously Presented): A process as claimed in claim 1, wherein the rectification column is flowed through by a molecular oxygen-containing gas.

Claim 9 (Previously Presented): A process as claimed in claim 1, wherein the condensation space has an offgas outlet.

Claim 10 (Original): A process as claimed in claim 9, wherein the condensation space is an empty pipe which narrows conically toward the offgas outlet.

Claim 11 (Currently Amended): A process as claimed in claim 1, wherein the at least one chimney tray, from which the top condensate formed is removed from the rectification column, has a slope on all sides toward the inner wall of the condensation space.

Claim 12 (Currently Amended): A process as claimed in claim 1, wherein ~~chimney~~
~~and the at least one chimney tray, from which the top condensate formed is removed from the~~
~~rectification column, and its at least one chimney,~~ are configured with thermal isolation
against the ~~section~~ region of the rectification column containing the separating internals.

Claim 13 (Currently Amended): A process as claimed in claim 1, wherein ~~chimney~~
~~and the at least one chimney tray, from which the top condensate formed is removed from the~~
~~rectification column, and its at least one chimney,~~ have a double-walled configuration
consisting of a higher and a lower wall.

Claim 14 (Currently Amended): A process as claimed in claim 13, wherein trace
heating is mounted ~~[[to]]~~ on the upper surface of the ~~inner~~ lower of the two walls.

Claim 15 (Currently Amended): A rectification column, comprising:
at least one chimney tray;
a spray condenser; and
a ~~section~~ region which contains separating internals and is completed at the top by the
at least one chimney tray and is continued into the spray condenser having at least two spray
~~zone~~ zones, each including spray nozzles, wherein the at least two spray zones are spatially
successive and ~~are flowed~~ are means which when flown through by vapor, have the function
to cool the vapor ~~being cooled~~ by spraying supercooled top condensate including added
polymerization inhibitor through the spray nozzles, and the temperature of the sprayed
supercooled top condensate becoming lower from spray zone to spray zone in the ~~flown~~ flow
direction of the vapor.